Executive Summary

This report was prepared by the Washington Utilities and Transportation Commission (UTC) and the Department of Community, Trade and Economic Development (CTED) under the provisions of ESSB 6560. The report provides information about Washington's electric utility industry, identifies trends affecting the industry and consumers, and identifies strategies for achieving policy objectives. It does not provide recommendations or reach conclusions as to the advisability of the changes described or the strategies discussed. The report is organized into nine sections:

1. Washington's Electricity Landscape

Washington's electric power system is unique. The state relies heavily on hydropower and federally owned generation and transmission facilities. The majority of retail electricity service is provided by consumer-owned utilities, with only about one-third of retail sales accounted for by investor-owned utilities regulated by the Washington Utilities and Transportation Commission (UTC). No utilities are granted exclusive territorial franchises in Washington. In contrast, most of the nation is served by fossil-fired generation delivered over investor-owned transmission lines. Retail service is dominated by investor-owned utilities regulated by the states. Most other states grant monopoly franchise service territories.

Average electricity rates in Washington are 4.19 cents/kWh, 40 percent below the national average. While rates vary across the state's 60 or more utilities, even the most expensive of Washington's utilities fall below the national average. Rates in the residential and commercial sectors have increased over the last 9 years, but at a pace substantially less than inflation. Some industrial customers, particularly those choosing non-traditional services that involve market-based pricing, have seen rate decreases over the last three years, while residential and commercial rates have generally been flat.

Utilities surveyed for the report serve approximately 90% of Washington's electricity customers. Among these customers, fewer than 1000 consume more than one average megawatt of electricity per year or have an annual peak demand greater than one megawatt. Less than one percent of customers have time of use electric meters.

Review of costs by category (generation, transmission, and distribution) suggests that the major reason for Washington's low electric rates is low-cost generation supplies. These relatively low-cost supplies are due to a variety of factors, including the Federal Columbia River Power System, the prevalence of hydropower generally, and the age and ownership characteristics of resources used to serve Washington consumers.

2. Trends Affecting Electric Service Costs

Trends are described in six categories: wholesale markets, retail markets, supply adequacy and reliability, environment, technology, and fuel cost.

Federal policy changes, including the Energy Policy Act of 1992 and subsequent FERC orders 888 and 889, are transforming wholesale power markets. Active short-term power markets have developed. These markets may reduce costs by increasing utilization of low-priced resources. They also exhibit volatility and may increase some environmental costs. Increasing wholesale competition may increase pressures to distribute the benefits of low-cost federal power more broadly.

All 50 states have at least examined the prospect of restructuring their retail markets, and mandatory retail competition is underway in at least 13 states. In Washington, utilities have experimented with pilot retail access programs and most offer some form of market-based rates to large customers. Many utilities are involved in corporate realignments and new partnerships. Uncertainty regarding future retail market structure seems to have shortened planning horizons and led to reduced investment in energy efficiency, renewable resources, and resource development generally. This uncertainty makes it unclear who can or should take actions to reduce the growing likelihood of supply and capacity shortages.

Declining salmon populations, global climate change, and increasing competition in electric power markets are trends that may affect the environmental cost of electricity production. At least in the case of declining salmon runs, more environmental costs are being “internalized” in power rates, reflecting the cost of salmon recovery measures. Internalization of environmental costs does not necessarily increase or decrease total costs, but it does increase prices. These price impacts may be offset by reduced environmental costs.

Improvements in the efficiency of electricity-generating and electricity-using technologies have reduced electric service costs. Renewable technologies and “distributed” technologies such as fuel cells may reduce the cost and change the nature of electric service in the future. New communication and information technologies may present significant opportunities to reduce electric service costs and expand product and service diversity.

Coal and gas prices have generally declined since the early 1980s, though gas prices have climbed since 1995. The cost of these fuels in Washington is below national averages.

3. Strategies to Minimize Electric Service Costs

Strategies to minimize electric service costs are grouped in the same categories as trends affecting electric service costs: wholesale market, retail market, supply adequacy and reliability, environment, technology, and fuel cost. Stakeholder comments on the first draft of this report revealed a tension between maintaining desirable characteristics of the existing system and a desire to respond to changes in the market that may render existing policies and strategies ineffective. Discussion of strategies does not imply that any change is recommended or endorsed.

The wholesale market is not under state jurisdiction. However, actions taken within the state and region may help to minimize the cost of wholesale power. Potential strategies to minimize wholesale power costs include reinforcing the connection between Washington consumers and the benefits of the Federal Columbia River Power System (FCRPS) and promoting more effective wholesale competition through more efficient operation of the high-voltage transmission grid.

ESSB 6560 did not call for a comparison of alternative retail market structures, and the evidence concerning the effects of market structure on costs is inconclusive. Some strategies may help minimize costs in the presence of competitive pressure by: 1) reinforcing the connection between Washington customers and low-cost resources; 2) mitigating incentives to either shift or increase total costs; and 3) removing barriers to efficient market operation.

The likelihood of supply and capacity shortages in the Northwest in the winter is growing. These shortages may occur under adverse hydropower conditions, due to power demands that exceed the region's combined capability to generate and import power. The prospect of shortfalls is exacerbated by market uncertainty. Utilities may be increasingly reluctant to develop and execute plans to meet future loads reliably when those loads may be served by other power suppliers. Other resource developers may also face obstacles associated with uncertainty.

Potential strategies to reduce environmental costs of electric service are described in three categories: salmon recovery, global climate change, and aligning competitive markets with environmental objectives. "Internalizing" environmental costs in energy prices may decrease or increase total costs, depending on whether the value of the resulting environmental improvement exceeds the cost of the measures undertaken. Some strategies, including cost-effective energy efficiency, may reduce both economic costs and environmental costs of electric service.

New and developing energy technologies hold significant promise for reducing electric service costs. Private firms, the federal Department of Energy, universities, national laboratories, and other research institutions are typically the leaders in energy technology development. However, the state can play a supporting role through policy initiatives and technology development partnerships. Periodic technology assessments may help to identify needs and opportunities.

Fuel costs are generally outside of the state's control. However, strategies discussed elsewhere in the report may affect the state's exposure to changes in fuel costs.

4. Electricity Rates and Equity: the Potential for Cost-shifting

Electricity rates in Washington are generally set by state or local regulators. These rates are based on an analysis of "cost of service" and regulators' assessments of fairness. For the limited purposes of this analysis, "cost shifts" are defined as decisions by rate regulators to change the distribution of costs. Changing political, regulatory, and market conditions can affect the way state and local regulators make these judgments.

Much of the power generation that serves Washington customers is likely to cost less than its market value. If the value of these low-cost resources is not preserved for Washington customers, power costs could rise significantly. Such an increase could put great pressure on state and local rate-setters to shift costs among customers and customer classes.

Changes in transmission regulation and in the way Bonneville Power Administration markets power may influence the probability of cost shifts in the wholesale market. Small rural utilities and residential and small farm customers of investor-owned utilities may be particularly exposed to these cost shifts. Strategies to discourage cost shifts in this sector focus on efforts to influence the decisions of the Federal Energy Regulatory Commission and BPA.

Cost shifts may also develop because of changes in retail electricity markets. By gaining access to market-based rates, some customers could leave behind power costs that local or state regulators may shift to other customers. Analysis in this report estimates the potential magnitude of such cost shifts under a range of market price forecasts and other assumptions. Under medium market forecasts, the estimated statewide average potential for cost shifts to the residential and commercial classes is estimated to be 1 to 2 percent of retail rates. Estimates for individual utilities range from 0 to 5 percent. The potential is greater under low market price scenerios.

Cost shifts could also result from utility system "bypass" – construction of generation or delivery facilities to serve large customers directly. Across a range of market-price forecasts, the statewide average potential for cost shifts due to bypass varies from 0.6 percent to 1.2 percent on retail rates of remaining customers. Estimates for individual utilities range from 0 to 3.4 percent.

A substantial proportion of industrial and large commercial load is already being served under "non-traditional" and market-priced tariffs. The average rate for this service is substantially lower than traditional industrial tariffs. There is no evidence that commercial and residential rates have increased as a result of these discounts. We do not know whether or how the benefits of lower-priced power would be distributed among customers in the absence of these tariffs.

A number of additional circumstances in the retail market could lead to cost shifts including: insufficient metering accuracy for competitive retail loads, unequal collection of funds for system benefit programs, avoidance of state and local revenue taxes, and technology change in “distributed generation” such as fuel cells, microturbines, and some renewable resources.

A wide variety of both market structure and administrative strategies are available to discourage or prevent the occurrence of cost shifts. Perhaps the most important of these is preservation of the value of low-cost generation resources for Washington customers. Additional structural strategies include clarification of service territory obligations and boundaries, and establishment of competitive retail customer classes, including clear terms and conditions for this service. Administrative strategies address rate setting by state or local utility regulators. These strategies include rate-freezes, rate caps, performance-based rates, clarification of stranded-cost issues, and clarification of system benefit program charges.

5. Utility Service Territory Agreements

Unlike most states, Washington does not issue state level “franchises” or “certificates” to provide electric service. While they may need local permits to construct facilities, most electric providers may serve any customer in the state, regardless of their historic service territory. Providers are allowed by state law to enter into voluntary, contractual “service territory agreements” that define service territories and obligations. These agreements must be approved by the WUTC. Over time there have been 28 such agreements; 17 remain in effect and a number that have formally expired are still being observed.

State law has no provision requiring electric companies to deliver power for other electric providers. However, state law does discourage the construction of duplicate facilities for energy service. Currently, there appears to be little duplication of facilities. However, duplication of facilities may increase, particularly if more customers seek energy supplies from providers other than their traditional distribution utility. State-level certificates could uniformly define the rights and responsibilities of distribution utilities without restricting the ability of new consumer-owned utilities to form. Proponents of establishing state certificates for distribution territories argue such a step could allow increased competition while maintaining the state policy against duplication of facilities. Opponents suggest that exclusive service territories would insulate distribution utilities from competition and decrease pressure to minimize distribution costs.

6. Consumer Protection Policies and Procedures

The UTC establishes consumer protection rules for investor-owned utilities and local governing boards establish consumer protection rules for consumer-owned utilities. Policies tend to be uniform for investor-owned utilities. There is more variation among consumer-owned utilities, with smaller utilities tending to have more informal means of establishing credit, collecting past due amounts, and handling customer complaints.

All covered utilities have complied with the disclosure requirements of ESSB 6560. The UTC and CTED surveyed utilities on their policies in a number of general categories including: credit and deposit requirements; methods of informing customers of rates and terms of service; metering, billing, and adjustment policies; payment arrangements, such as due dates, late fees, budget plans, and financial assistance; disconnection procedures; confidentiality of customer information; complaint procedures; protections for contract customers; and customer survey methods.

Increased competition may lead to increasing consumer complaints. Additional consumer protection may be needed if competition increases, along with consumer education designed to alert consumers to their new rights and choices. Some issues that may arise include: protecting consumers from fraudulent providers; ensuring adequate disclosure of product information so customers can compare offerings; allocating stranded costs among customers and shareholders; clarification of metering requirements; disconnection policies; protecting against market power abuses; registration and licensing of service providers; and ensuring that basic service remains affordable.

7. Utility Service Quality

Service quality encompasses items such as customer access to the utility; responsiveness to customers; restoring power after outages; the time required to establish new service or make repairs; and the process for handling customer complaints.

The UTC oversees service quality standards for investor-owned utilities while local governing boards oversee standards for consumer-owned utilities. Rules governing service quality are not uniform or comprehensive. In one case, as a condition of a utility merger, the UTC has developed a detailed service quality index (SQI), establishing targets and monetary sanctions.

Existing and prospective competition may begin to put pressure on service quality performance. Experience in other industries indicates that customers with more competitive choices tend to see improved service quality, while monopoly customers see a decline. A survey of state utilities shows that many do not routinely measure service quality and that the elements that are measured vary from utility to utility. Lack of common data makes it difficult to draw general conclusions.

If the Legislature decides that minimum service quality standards should be established, it has at least two alternative strategies. It could set general principles and let state and local regulators establish specific standards consistent with the principles. This would allow local decision-making, and would likely lead to more variation in policies. Alternatively, the Legislature could set uniform statewide standards. This would ensure consistency throughout the state, but may not recognize unique local conditions. If retail competition is broadly implemented, the Legislature could establish a service quality “floor,” but allow individual companies to provide a higher level of service as a way to compete.

8. Electric Service Reliability

Major dimensions of system reliability include power interruption, power quality, and generation supply adequacy. Available survey and engineering data tentatively show that Washington consumers are generally satisfied with the reliability of the electric power system, and that system outage statistics are comparable to national averages.

Most utilities measure power interruptions, though precise methods vary. Equipment failure, trees and branches, animals and accidents are the cause of most power interruptions. Storms are often the immediate cause of such interruptions.

Power quality refers to the voltage and frequency characteristics of delivered power. While power quality has long been a concern for industries with sophisticated production equipment, it is a growing concern for other business and residential customers because of the proliferation of microprocessors, which are sensitive to power fluctuations.

Reliability also depends on adequate power supply capacity. In our hydroelectric based system, supply varies substantially with precipitation and snowpack. Transmission capacity can affect the ability of utilities to meet peak loads reliably, particularly in Western Washington. With growing competition and uncertainty regarding future market structure, utilities' ability to plan for and invest in adequate power supplies may be impaired. Increasingly, power supply may be provided by independent producers that are not subject to state or local regulation. The ability of these independent entities to deliver power reliably under a range of weather and market conditions is not known.

Competitive pressures and market uncertainty may also affect utility investment in distribution systems, where storm response, system maintenance, system expansion and vegetation management are keys to reliability. Utilities may also face pressure to help customers protect themselves from power quality fluctuations and to ensure their systems are Y2K compliant.

Additional challenges to system reliability may be found in the transmission system, which handles transfers of bulk power. Historically, the system has been managed by regional utilities that voluntarily comply with industry standards. Increasing competition in wholesale power markets makes voluntary compliance more difficult to maintain. Discussions are taking place at the national and regional levels to develop new models designed to maintain transmission system reliability.

Strategies that address reliability in distribution, generation, and transmission are discussed. Distribution strategies are further categorized into those that involve performance standards, program standards, and institutional and market issues.

9. Electric System Benefits

State and federal governments have adopted a variety of policies in support of conservation, renewable resources, and low-income service ("system benefits"). Policy goals underlying these purposes include: minimizing total costs of energy service; ensuring affordable service; environmental quality; affordable housing; efficiency in government and industry; diversification of energy supplies; minimizing waste; and others.

Trends: From 1979 to 1995, the region's utilities acquired over 800 average megawatts of energy savings in cooperation with state and local governments and consumers. The Northwest Power Planning Council estimates that 1500 average megawatts of cost-effective savings are available at an average cost of 1.7 cents per kWh. Capturing these savings would reduce the region's electricity bill by an estimated $1.7 billion. Investment in energy efficiency in Washington has declined from nearly $155 million in 1993 to an estimated $44 million in 1998 and is projected to continue to decline to $24 million in 2000. Competitive pressure to minimize prices, lower wholesale energy prices, uncertainty regarding future market structure, and programmatic changes have contributed to this decline.

Non-hydro renewables represent less than 1% of utility sales in Washington. Declining wholesale power prices and market uncertainty have dampened renewable resource development below what was planned in the early 1990s. Utility-scale wind projects came on line in Oregon and Wyoming in 1998. However, a planned project in southern Washington was cancelled.

Low-income energy services include home weatherization and various forms of assistance in paying bills. While need appears to be increasing, funding for these services has declined, due in large measure to reductions in federal and BPA funding. There are some indications that low-income bill assistance by utilities may be increasing.

Electric system benefits have been accomplished with a mixture of public and private investment. Public investment in these functions has come primarily from electric service revenues and been administered by utilities and BPA. Public investment may be necessary in order to remove market barriers to energy efficiency, or to achieve other policy goals including environmental quality and universal service. Most of the states that are restructuring retail markets have included provisions for funding energy efficiency, renewable resources, low-income services, and/or research and demonstration.

Strategies: Opinions vary widely on how to pay for, administer, and achieve electric system benefits. However, there appears to be relatively broad support for approaches that: encourage rather than replace private investment in these functions; maximize the ratio of achievement to investment; and distribute the costs and benefits of these investments equitably.

Sources of public investment include electric service revenues and tax revenues. Electric service revenues may be collected through a “system benefits charge” – a competitively neutral charge on delivery of electricity that applies to all consumers. A variety of program approaches and administrative options for public investment in energy efficiency, renewable resources, and low-income services are discussed, with an emphasis on how these approaches can complement and encourage private investment while minimizing costs.

Other strategies for accomplishing these purposes may require little or no direct public investment. These include: improved energy codes and standards; developing markets for “green” resources; a renewable portfolio standard; “internalizing” environmental costs through environmental standards or fees; and flexible payment arrangements for low-income customers.

Achievement of electricity system benefits over time may be improved by establishment and tracking of performance objectives, and through periodic review of investment levels and program strategies.